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Alcohol and Substance Dependence in the United Arab Emirates: A Scoping Review Protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2022-071208
Article Type:	Protocol
Date Submitted by the Author:	20-Dec-2022
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Keywords:	Substance misuse < PSYCHIATRY, SOCIAL MEDICINE, PUBLIC HEALTH

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Alcohol and Substance Dependence in the United Arab Emirates: A Scoping Review Protocol

Abstract

Introduction: Despite cultural, religious, and legal constraints, alcohol and drug abuse are rising in United Arab Emirates(UAE). We aim to produce the first scoping review on the nature and scope of the literature on alcohol and drug dependence in the UAE, as well as insights into the government's response to this increasing social problem.

Methods and analysis: The proposed scoping review will be conducted by Social Work faculty from the United Arab Emirates University between January and July 2023. Using the PCC (Participants; Concept; Context) framework, four review questions, inclusion/exclusion criteria, and a search strategy were developed. We will search the following electronic databases: MEDLINE, EMBASE, the Cochrane Library, Cumulative Index to Nursing and Allied Health Literature, PsycINFO, Social Work Abstracts, Social Services Abstracts, grey literature sources and the reference lists of fundamental studies to identify eligible studies, in English and Arabic languages. Two Arabic-and-English-speaking team members will search the databases and use Endnote and Covidence to screen titles, abstracts, and full texts. Conflicts will be resolved during consensus discussions with a third reviewer and the research team. Data charting will be informed by the Covidence data extraction tool 2.0, followed by qualitative content analysis. Reporting of the findings will align with the PRISMA extension for Scoping Reviews (PRISMA-ScR) tool

Ethics and dissemination: Ethical approval is not required for this study because this is a scoping review of published studies and grey literature. Findings will be disseminated via peer-reviewed journal publications, scientific conference presentations and a policy brief.

Key words: *Substance abuse; public health; United Arab Emirates; scoping review*

Strengths and limitations

- This study will produce the first scoping review on alcohol and substance dependence in the UAE, and aims to comprehensively review empirical studies on alcohol and substance dependence in the UAE.
- The study will also investigate and synthesise the UAE government's response to increased alcohol and substance abuse, as well as make recommendations for future actions.
- A diverse team of English and Arabic speaking faculty with a background in Social work and social policy will conduct the study.
- The study will review and synthesise both empirical and grey literature.
- It is possible that our review will not include all scholarly articles or grey literature published in every journal because some may be unavailable.

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INTRODUCTION

Alcohol and drug abuse is a centuries-old escalating global issue and has been linked to various adverse health and social consequences for individuals, families, and communities (1). In response, target 3.5, one of the United Nations' 17 Sustainable Development Goals (SDGs) adopted in 2015, aims to "strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful alcohol use"(2, 3). While various terms have been used in literature, alcohol and substance dependence (ASD) will be used throughout this review protocol. Decades of studies have accumulated evidence that adverse childhood experiences, comorbidities like anxiety, mood disorders, and other mental health difficulties, contribute to the development of ASD (4-6). Similarly, studies conducted during COVID-19 discovered that mental health factors were the most common triggers of increased alcohol and other substance use (5).

Research over the years has demonstrated that despite cultural, religious, and legal constraints, ASD is on the rise among Muslim Arabs in Islamic nations such as Syria (7), Jordan and Palestine (8, 9), Saudi Arabia (10-13), and Kuwait (14). It is no different in the Islamic nation of the United Arab Emirates (UAE), located in the Arabian Gulf, a signatory to the 17 SDGs and part of the Gulf Cooperation Council (GCC). The GCC consists of six Islamic countries, namely Saudi Arabia, Qatar, Kuwait, Bahrain, Oman, and UAE. In 2009, a systematic review identified sixty studies published between 1975 and 2007 that reported on alcohol and other substance abuse addictions among Arab nationals and Muslims living in GCC countries. The review comprised seven studies conducted in the UAE between 1994 and 2001. These seven studies examined sociodemographic variables, community samples, and legal issues associated with ASD (15).

Since 2001, there has been increased attention in the literature investigating ASD in the UAE. Some scholars explored the cultural elements and treatment delivery (16), whilst others focused their studies on the estimates of the economic implications of addiction in the UAE (17). Alhyas and colleagues aimed their studies at youth. They attempted to gain a deeper understanding of the attitudes and perceptions of adolescents in the United Arab Emirates regarding substance dependence and to identify factors that, in their view, may influence the risk of substance use and suggested possible interventions (18). Other scholars described UAE substance abuse patterns (19); characteristics of misusers (20); recovery patterns (21); and treatment options (16). Studies conducted by the National Rehabilitation Centre in the UAE

examined the drug trend information within a substance-using patient population in the UAE to improve knowledge of the nature, severity and context of ASD in the UAE (22-24). Recent conference proceedings addressing ASD in the UAE reported on the demographic profile of alcohol and substance abuse in the UAE and the government's response to the increasing social problem (25).

Although there is a growing body of research on ASD in the UAE, no evidence synthesis has been conducted covering studies conducted between 2001 and 2022. A scoping review is the most appropriate type of evidence synthesis to address this gap, as it will allow synthesising the nature and scope of the literature on ASD in the UAE to identify research gaps and inform future scientific inquiry into the social problem (26, 27). In addition, a scoping review also allows for the inclusion of grey literature to review sources about the UAE government's response to the increasing ASD (e.g. legislation, prevention, and treatment, among others).

Contextualising the research setting

The UAE is an Islamic country in Western Asia, located in the middle east and came into existence in 1972 as a federation of seven Emirates, namely Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, and Al Fujairah; and Ras Al Khaimah. The Federal Supreme Council is the highest legislative and executive body, consisting of seven members (one for each Emirate). However, some powers are kept with the individual emirates. The UAE's population stood at 10.08 million people with a life expectancy of 78 years and is home to a very diverse population with more than 200 nationalities that make up about 80% of the population (25).

As an Islamic country, the UAE operates under Sharia law. Sharia law is based on what the Qur'an says, so it is against the law for Muslims to own, sell, or drink alcohol or any other illegal substances. Therefore, alcohol consumption is forbidden by Islam and local law in the UAE. As such, before 2020, expats had to hold a license to be allowed to consume, buy, sell or transport alcohol, even if above the legal age of 21 years. However, according to the recent amendments to the Federal Criminal Code (Federal Decree By-Law No. 15 of 2020)(28), the Union Supreme Court, the highest court in the UAE, issued a new judgment regarding the position on the use and possession of alcohol. As a result, the regulations on alcohol consumption were amended to adjust to the changing society. Therefore, residents, restaurants and hotels no longer need a license to sell and consume alcohol. Nonetheless, the drinking age of 21 was maintained, as was a zero-tolerance policy for driving or being in public while intoxicated. Furthermore, the abovementioned court also stipulates that if an Emirate's local

law prohibits the consumption of alcohol (and the Emirate has jurisdiction), this law should be applied instead of the Federal Criminal Code. As such, the use and sale of alcohol have been allowed in six of the seven Emirates and strictly forbidden in Sharjah.

The UAE has a zero-tolerance for the recreational use and possession of narcotic drugs such as cannabis, cocaine, heroin, methadone, opium, and psychotropic drugs, for example, painkillers, unless part of a supervised and regulated medical and scientific activity (25). Heavy penalties were given for violations, including prison sentences, fines and deportation for expats (29). In 2021 the laws changed, providing a second chance for first-time offenders and averting prison sentences, dependent individuals who voluntarily present themselves and those reported by family members receive rehabilitation instead of prosecutions (25). Most Emirati citizens arrested on drug charges must participate in a rehabilitation program that lasts for two years (30).

In the 2014 edition of the World Drug Report, the UAE, due to its geographical location, is reportedly a significant hub for the international distribution of illegal drugs via air transit (31). Furthermore, the Ministry of the Interior's announcement that 8,428 people were arrested in the UAE for drug-related crimes in 2021, up 20.8% from 6,973 in 2020, confirms a high demand and supply of illegal substances in the UAE, despite harsh penalties for those who manufacture, export, transport, purchase, sell, and even store them (29, 32).

To summarise, it is crucial to learn from the growing body of research on ASD in the UAE to enhance our capacity to recognise, analyse, and evaluate indicators of drug use, associated harm, and treatment options. Current data collection efforts are limited in their capacity to inform appropriate prevention fully, treatment and harm reduction responses. Such knowledge can identify research gaps to inform future research studies and interventions to ensure that resources are devoted effectively. A preliminary search in MEDLINE, the Cochrane Database of Systematic Reviews, and the JBI Evidence Synthesis revealed no active or ongoing systematic reviews or scoping reviews on ASD in the UAE.

METHODS AND ANALYSIS

The proposed scoping review will be conducted following the Joanna Briggs Institute's (JBI) methodology for scoping reviews (27), and a team of Social Work faculty members at the Department of Social Wellbeing, United Arab Emirates University (UAEU) will execute the reviews. Reporting of the findings will align with the PRISMA extension for Scoping Reviews

(PRISMA-ScR) tool (33). The PCC framework was used to develop four review questions and the inclusion and exclusion criteria (See table 1).

Review questions

The PCC" mnemonic (population, concept, and context) were used as a guide (27) to develop the research question and ensure alignment with the eligibility criteria.

1. What can be learned from the literature about the nature and extent, context, and impact of alcohol and substance dependence in the United Arab Emirates?
2. What can be learned from the literature about the Federal government in the UAE's response to combat alcohol and substance dependence over the last two decades?
3. What can be learned from the literature about the seven individual Emirates in the UAE government's response to combat alcohol and substance dependence over the last two decades?
4. What recommendations can be formulated to inform future policy and governmental responses to alcohol and substance abuse dependence in the UAE?

Eligibility criteria

Table 1: Inclusion and exclusion criteria

PCC framework/element	Inclusion criteria	Exclusion criteria
Participants	All studies that included: Patients/participants of any nationality, religion, gender or age, with alcohol and substance dependence as the sample or an outcome.	Opinion and narrative literature reviews will be excluded. Publications covering clinical trials involving restricted substances will not be included.
Concept	All studies reporting on: alcohol abuse; alcohol abuse disorders; substance abuse disorders; alcohol or substance addiction; illegal substances; addiction to controlled substances; risk factors and adverse outcomes; protective factors and prevention; relapse; aftercare; rehabilitation; harm reduction; triggers' overdose	Studies in which full-length articles are not available or cannot be retrieved.
Context	Studies reporting on ASD in any of the seven Emirates (Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Al	

PCC framework/element	Inclusion criteria	Exclusion criteria
	<p>Fujairah; and Ras Al Khaimah); Rehabilitation- and outpatient centres and settings (e.g. National Rehabilitation Centre; Alcohol Anonymous; hospitals); promulgated legislation and policies; reported court cases; and government reports.</p> <p>Empirical studies that were conducted between January 2001 and December 2022 (since last review).</p> <p>Grey literature such as legislation, and policies promulgated between 1972 and 2022 (since establishment of the UAE).</p>	

Types of sources

This scoping review will consider scholarly sources such as experimental and quasi-experimental study designs, including randomised controlled trials, non-randomised controlled trials, before and after studies and interrupted time-series studies. In addition, analytical observational studies, including prospective and retrospective cohort studies, case-control studies and analytical cross-sectional studies, will be considered for inclusion. This review will also consider descriptive observational study designs, including case series, individual case reports and descriptive cross-sectional studies for inclusion. Qualitative studies focusing on qualitative data will also include, but are not limited to, designs such as phenomenology, grounded theory, ethnography, qualitative description, action research and feminist research. Furthermore, grey literature will also be included, such as legislation, regulations, and policy documents. The structure of health care in the UAE varies from one Emirate to another, and therefore, in addition to sources published by the Federal authority, grey literature published on the official websites of the Health Authority of Abu Dhabi, Abu Dhabi Health Services Company, Abu Dhabi, Dubai Health Authority and the Ministry of Health; The Ministry of Health is the regulatory and provisional body for public and private healthcare facilities in Sharjah, Ajman, Fujairah, Ras al-Khaimah, Sharjah and Umm Al-Quwain there a. Also, sources published by the only rehabilitation centre in the UAE, the National Rehabilitation Centre, and Official statistics by the Police in the seven Emirates will provide an indication s

from authoritative sources such as the World Health Organisation, the Ministry of Health, Conference proceedings and postgraduate dissertations.

Search strategy and terms

The search strategy will locate both published and unpublished studies/grey literature in English and Arabic languages. An initial limited search of MEDLINE and SCOPUS was undertaken to identify articles on the topic. Following a consultation with a librarian in the UAE University, and studying text words contained in the titles and abstracts of relevant articles, the index terms used to describe the articles were used to develop a complete search strategy (See Table 2) The search databases include SCOPUS; PubMed; Embase; Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, Social Work Abstracts, Social Services Abstracts; Science Direct. and Web of Science. The four databases will be searched in January 2023. Studies published in English or Arabic between January 2001 and December 2022 will be included, as the previous review that included UAE studies on the topic included studies covering the period up to 2007. Arabic is the UAE's primary language, and English is the language in which publications are published.

Table 2: Proposed search terms in English and Arabic

PCC framework	English	Arabic
Participant	Adults* Youth* Children* Muslim* Emirati* All religions	المشاركين من فئة: البالغين الشباب الأطفال المسلمين الإماراتيين جميع الأديان
Concept	Substance* OR alcohol OR drug* AND controlled OR abuse* OR misuse OR addiction* OR dependence OR use OR illegal.	المصطلحات: مادة / الكحول / المخدرات المادة أو الكحول الخاضعين للرقابة / العنف إساءة استخدام العقاقير / الإدمان الاعتماد / الاستخدام / الغير قانوني
	Substance-abuse disorder* OR Alcohol-abuse-related disorders Alcohol-abuse disorder* OR Substance-abuse-related disorder*.	اضطراب تعاطي المواد المخدرة الاضطرابات المرتبطة بتعاطي الكحول اضطراب تعاطي الكحول الاضطراب المرتبط بتعاطي المخدرات
	Relapse*; Triggers*, prevention*; treatment OR rehabilitation* OR aftercare OR prevention* OR relapse OR aftercare OR harm reduction OR triggers OR overdose*	الانتكاسة محفزات منع / وقاية علاج أو معاملة إعادة تأهيل

		التعافي الرعاية اللاحقة تقليل الأضرار جرعة زائدة
	Legislation; decree; policy; strategy	تشريع مرسوم سياسة استراتيجية
Context	United Arab Emirates*(Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, and Al Fujairah; and Ras Al Khaimah); Rehabilitation centres; outpatient; Alcohol Anonymous; hospital setting; Police; Prison*.	دولة الإمارات العربية المتحدة أبوظبي – دبي – الشارقة – عجمان – أم القيوين – رأس الخيمة- الفجيرة مراكز التأهيل العيادات الخارجية مدمنين الكحول المجهولين بيئة المستشفى الشرطة السجن

The search strategy, including all identified keywords and index terms, will be adapted for each included database and information source. Hand searches of the reference list of all included sources of evidence will be screened for additional studies. We will also search Research Gate, and Artificial Intelligence platforms such as Research Rabbit and Elicit to screen for eligible studies. Furthermore, contact will be made with study authors to explore if they know of any other unpublished studies. Following Arksey and O'Malley (34), experts in the field, such as the National Rehabilitation Centre, will be contacted to ascertain the existence of any unpublished reports.

Four researchers will conduct the searches, working in pairs; two persons will search in English and two in Arabic to ensure that no studies are missed, and will export searches to an EndNote library(35) and Covidence (36). The search results and the study inclusion process will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) flow diagram (33).

Screening process

The team settings in Covidence will allow importing citations, managing screening by multiple reviewers, data extraction and file export. The screening will be done over two stages. During each stage, four team members (Two English speaking and two Arabic speaking) with a good

knowledge of the topic will be involved to ensure fast and accurate screening, and to maximise retrieval of eligible studies without undue influencing. In preparation for the first phase, the screening of titles and abstracts and the inclusion and exclusion criteria will be pilot tested by screening at least ten titles and abstracts that AF randomly chose. Next, the team will meet and discuss the challenge, adjust eligibility criteria and formulate a potential justification for exclusion. Finally, two team members will screen all the English and other Arabic titles and abstracts against the inclusion and exclusion criteria to remove irrelevant material. Justification for exclusions will be documented in Covidence.

Only full-length articles from studies that reached a consensus on inclusion will be downloaded during the second screening phase. Hereafter, potentially relevant full-length articles will be uploaded on Covidence by the first author and an Arabic-speaking author. Two or more independent reviewers (depending on how many Arabic articles were identified) will assess the full text of selected citations in detail against the inclusion criteria. Reasons for excluding sources of evidence in full text that do not meet the inclusion criteria will be recorded. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion and the vote of additional reviewers. After a decision was made on the included studies, the reference lists of the included studies will be screened to identify further eligible studies. The articles will be imported to Covidence, with the title and abstract screened against eligibility, followed by reviewing eligible full-length articles. Finally, two team members will contact experts in the field to obtain unpublished studies, reports and conference presentations. These sources will be screened for eligibility. The screening phase will take place between February and March 2023.

Charting the data

Next, data extraction will take place. The aim is to create a descriptive summary of the results which addresses the scoping review's objectives and ideally answers the questions of the review. First, data extraction 2.0 will be created in Covidence (36) using the following items: author(s); year of publication; origin/country of origin (where the study was published or conducted); aims/purpose; study population and sample size (if applicable); methodology/methods; key findings that relate to nature and extent of ASD; contextual factors; risk and protective factors (37) The draft data extraction tool will be modified and revised as necessary while extracting data from each included evidence source. The draft extraction form will first be pilot tested by the two reviewers on at least five studies. Next, the research team

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will meet to discuss the finalisation of the data extraction during a team meeting. Two reviewers will independently extract data and send it for consensus to a third reviewer on Covidence. Any reviewer disagreements will be resolved through discussion or with an additional reviewer/s. If appropriate, authors of papers will be contacted to request missing or additional data, where required. The extracted data will be circulated hereafter on Google drive for other team members to review. Any amendments to the data extraction tool will be documented in the Scoping review. Data charting will take place in April 2023

Data analysis and presentation

After the conclusion of the data extraction, the export function in Covidence will be used to export the data in an excel.csv format. Finally, the data sheet will be prepared for data analysis and synthesis. This study will draw on JBI's recent publication on qualitative content analysis in scoping reviews (37) and the constant comparison of qualitative data analysis to inform the analysis of extracted data. Following data analysis and an iterative process between the data set and ASD literature, categories will be developed to respond directly to the review question(s). The findings will be presented graphically or in diagrammatic or tabular form. A narrative summary will accompany the tabulated and charted results and describe how the results relate to the review's question. Data analysis and writing up the findings of the scoping review will take place between May 2023 and July 2023.

Consultations with key stakeholders

A summary of the findings will be sent to key stakeholders in the UAE working in the field of ASD in June 2023 to comment on and provide feedback before submission for publication (38).

Patient and public involvement

No patient involved.

Ethics and dissemination

Ethical approval is not required for this study because this is a scoping review of published studies and grey literature. This scoping review's findings will be disseminated via peer-reviewed journal publications, scientific conference presentations, and a policy brief.

Statements

- **Contributorship statement:** AF conceived of the idea, developed the research questions and study methods and contributed meaningfully to the drafting and editing; she has also approved the final manuscript. AA, EA, MA, KA, VA, KC, RM, and PT aided in developing the research question and study methods, translation and back-translation of searching terms, contributed meaningfully to the drafting and editing, and approved the final manuscript.
- **Competing interests** None declared.
- **Funding:** This research received no specific grant from any funding agency in the public, commercial or non-profit sectors.
- **Data sharing statement** No additional data are available.
- **Provenance and peer review** Not commissioned; externally peer reviewed.

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Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	
Limitations	20	Discuss the limitations of the scoping review process.	
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	

JB1 = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med*. 2018;169:467–473. doi: 10.7326/M18-0850.

BMJ Open

Alcohol and Substance Dependence in the United Arab Emirates: A Scoping Review Protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2022-071208.R1
Article Type:	Protocol
Date Submitted by the Author:	22-Mar-2023
Complete List of Authors:	Fouche, Ansie; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing Albrithen, Abdulaziz ; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing AlNuaimi, Mariam ; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing Al Riyami, Khoula ; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing Aruldoss, Vinnarasan ; United Arab Emirates University, Social Wellbeing Cooper, Krista; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing Marta, Raquel; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing Tendam, Prospera; United Arab Emirates University Faculty of Humanities and Social Sciences, Social Wellbeing
Primary Subject Heading:	Addiction
Secondary Subject Heading:	Addiction, Public health
Keywords:	Substance misuse < PSYCHIATRY, SOCIAL MEDICINE, PUBLIC HEALTH

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Alcohol and Substance Dependence in the United Arab Emirates: A Scoping Review

Protocol

Abstract

Introduction: Despite cultural, religious, and legal constraints, alcohol and drug abuse is rising in United Arab Emirates(UAE). Therefore, we aim to produce a scoping review to summarise available scientific literature on alcohol and substance dependence in all ethnic and religious groups in the UAE to inform future scientific inquiries.

Methods and analysis: Social work faculty from the UAE University will conduct the scoping review between March 2023 and February 2024. Drawing on the Participants, Concept, Context (PCC) framework, the following review question was developed: What can be learned from a review of scientific literature on alcohol and substance abuse in all ethnic and religious groups in the UAE? The scientific literature on ASD in the UAE published between 1971 and January 2023, in either English or Arabic, will be considered, including all ethnic, religious, and age groups. Grey literature, such as postgraduate dissertations and conference proceedings, will also be considered. Eight English and two Arabic databases and print copies of literature sources in university libraries will be included. Endnote and Covidence software will be used for deduplication, screening, and data extraction. Screening and reviewing search results will involve two English-speaking and two Arabic-speaking team members who will work independently. A third reviewer will resolve conflicts. The Inter-rater reliability data from the title and abstract screening stage will be exported, and Cohen's Kappa coefficient will be calculated. Data charting informed by the Covidence data extraction tool 2.0 will occur after pilot testing, followed by qualitative content analysis. Reporting of the findings will align with the PRISMA extension for Scoping Reviews (PRISMA-ScR) tool.

Ethics and dissemination: Ethical approval is not required for this study because this is a scoping review of published studies and grey literature. Findings will be disseminated via peer-reviewed journal publications, scientific conferences and a policy brief.

Strengths and limitations

- A scoping review of the scientific literature on alcohol and substance dependence across all ethnic and religious groups in the United Arab Emirates since 1971 will be produced.
- The review will include paper copies of scientific literature published in the 1970s and 1980s that are unavailable online.
- A diverse team of English and Arabic-speaking faculty with a background in Social work will conduct the review.
- There will be no formal assessment of the literature sources.

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INTRODUCTION

Alcohol and drug abuse is a centuries-old escalating global issue linked to various adverse health and social consequences for individuals, families, and communities (1). In response, target 3.5, one of the United Nations' 17 Sustainable Development Goals (SDGs) adopted in 2015, aims to "strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful alcohol use"(2, 3). While various terms have been used in scientific literature, alcohol and substance dependence (ASD) will be used throughout this review protocol. Decades of studies have accumulated evidence that adverse childhood experiences, comorbidities like anxiety, mood disorders, and other mental health difficulties, contribute to the development of ASD (4, 5). Researchers found a worldwide rise in alcohol and other substance abuse during COVID-19 (6), with deteriorating mental health being a major contributing factor (7).

Research over the years has demonstrated that despite cultural, religious, and legal constraints, ASD is on the rise among Muslim Arabs in Islamic nations such as Syria (8), Jordan and Palestine (9, 10), Saudi Arabia (11-14), and Kuwait (15). It is no different in the Islamic nation of the United Arab Emirates (UAE) in the Arabian Gulf, a signatory to the 17 SDGs and part of the Gulf Cooperation Council (GCC). The GCC comprises six Islamic countries: Saudi Arabia, Qatar, Kuwait, Bahrain, Oman, and UAE. A 2009 systematic review identified sixty studies published between 1975 and 2007 that reported on alcohol and other substance abuse addictions among Arab Muslims living in GCC countries. The review comprised seven studies conducted in the UAE between 1994 and 2001. These seven studies examined sociodemographic variables, community samples, and legal issues associated with ASD (16). This review, however, has two significant limitations. First, it excluded potential studies on the ASD of other ethnic and religious groups who work and live in the UAE. Second, ASD research

published in English and Arabic in the UAE between the 1980s and early 1990s was excluded. (17).

There has been increased attention in the literature investigating ASD among UAE citizens and expats in the UAE over the last three decades. Some scholars explored the cultural elements and treatment delivery (18), whilst others focused their studies on the estimates of the economic implications of addiction in the UAE (19). Alhyas and colleagues aimed their studies at youth. They attempted to gain a deeper understanding of the attitudes and perceptions of adolescents in the United Arab Emirates regarding substance dependence and to identify factors that, in their view, may influence the risk of substance use and suggested possible interventions (20). Other scholars described UAE substance abuse patterns (21); characteristics of misusers (22); recovery patterns (23); and treatment options (18). Studies conducted by the National Rehabilitation Centre in the UAE examined the drug trend information within a substance-using patient population in the UAE to improve knowledge of the nature, severity and context of ASD in the UAE (24-26). Recent conference proceedings addressing ASD in the UAE reported on the demographic profile of alcohol and substance abuse in the UAE (27).

Contextualising the research setting

The UAE is an Islamic country in Western Asia, located in the middle east and came into existence in 1971 as a federation of seven Emirates, namely Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, and Al Fujairah; and Ras Al Khaimah. The Federal Supreme Council is the highest legislative and executive body, consisting of seven members (one for each Emirate). However, some powers are kept with the individual emirates. The population increased dramatically, from 344 512 in 1971 to 9.4 million in 2022. Over 88% of the population are expats who work and live in the UAE and come from more than 200 different countries(27, 28).

Since the establishment of the UAE in 1971, the economic and social landscape has shifted significantly. Citizens moved from a nomadic and isolated life into a luxurious lifestyle in urban areas and may have been influenced by the values and traditions of the large expat community(17). Furthermore, the United Arab Emirates (UAE) has emerged as a major tourist hotspot, and its strategic location makes it a significant transshipment point for narcotics like heroin, cocaine, methamphetamine, and cannabis (29). As an Islamic country, the UAE operates under Sharia law. Sharia law is based on what the Qur'an says, so it is against the law for Muslims to own, sell, or drink alcohol or any other illegal substances. Therefore, alcohol consumption is forbidden by Islam and local law in the UAE. However, the UAE's growing expat population and its reputation as a tourist hotspot may have increased pressure for the country to liberalise its alcohol policies (29). Before 2020, expats had to hold a license to buy and consume alcohol from registered providers. In recent amendments to the Federal Criminal Code (Federal Decree By-Law No. 15 of 2020)(30), the Union Supreme Court, the highest court in the UAE, issued a new judgment regarding the position on the use and possession of alcohol. As a result, the regulations on alcohol consumption were again amended to reflect the changing society.

The abovementioned court also stipulates that if an Emirate's local law prohibits the consumption of alcohol (and the Emirate has jurisdiction), this law should be applied instead of the Federal Criminal Code. As a result, residents in six Emirates no longer need a license to consume alcohol, whereas Sharjah strictly prohibits it. Nonetheless, the legal drinking age of 21 was maintained, as was a zero-tolerance policy for driving or being in public while intoxicated and selling or serving alcohol to Muslims.

The UAE has a zero-tolerance for the recreational use and possession of narcotic drugs such as cannabis, cocaine, heroin, methadone, opium, and psychotropic drugs, for example, painkillers, unless part of a supervised and regulated medical and scientific activity(27).

Heavy penalties were given for violations, including prison sentences, fines and deportation for expats (31). In 2021 the laws changed, providing a second chance for first-time offenders and averting prison sentences; dependent individuals who voluntarily present themselves and those reported by family members receive rehabilitation instead of prosecutions(27). Most Emirati citizens arrested on drug charges must participate in a rehabilitation program that lasts for two years (32).

The WHO Status Report on Alcohol and Health in 2018 (33) reported an increase in per capita pure alcohol consumption, from 3.1 litres in 2010 to 3.6 litres in 2016 in the UAE, making it one of the highest in the Arab World. In a preliminary estimate, Doran (19) reported that out of a total population of 8.26 million in the UAE in 2012, 380,085 (> 5%) used cannabis, 14,077 (0.2%) used alcohol in a harmful manner, and 1,408 (0.02%) used opiates (19). In addition, the cost of addiction was estimated at US\$ 5.47 billion in 2012. In a six-year review of UAE drug trends, Alhassan and colleagues (34) found that the number of patients admitted to the Government's National Rehabilitation Centre (NRC) for treatment increased significantly. In 2013, there were 545 admissions, 417 of which were first-time treatment admissions, compared to 1750 in 2018 and 502 first-time treatment seekers (34). Recently, for the first time, the Ministry of the Interior (Police) announced statistics on drug-related crime in the UAE. Alarming, 8,428 people were arrested in the UAE for drug-related crimes in 2021, up 20.8% from 6,973 in 2020, confirming a high demand and supply of narcotic drugs in the UAE, despite harsh penalties for those who manufacture, export, transport, and purchase, sell, and store them(35).

To summarise, in light of the increase of ASD in the UAE communities, the long-term adverse effect of ASD, the limitations of the systematic review mentioned earlier (16), and the growing body of research on ASD in the UAE, a systematic search on the scientific literature on ASD in the UAE that includes all cultural and religious backgrounds over the last 50 years is needed.

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3 A scoping review is the most appropriate evidence synthesis to synthesise scientific literature
4 in the UAE (36, 37). Such knowledge can be used to identify research gaps and guide future
5 scientific inquiry, ensuring that resources are used effectively to combat ASD in the UAE.
6
7 However, a preliminary search in MEDLINE, the Cochrane Database of Systematic Reviews,
8 PROSPERO and the JBI Evidence Synthesis on 15 November 2022 and 28 February 2023
9 revealed no active or ongoing systematic reviews or scoping reviews on ASD in the UAE.

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18 **METHODS AND ANALYSIS**

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20 The proposed scoping review will be conducted following the Joanna Briggs Institute's (JBI)
21 methodology for scoping reviews (37), and a team of Social Work faculty members at the
22 Department of Social Wellbeing, United Arab Emirates University (UAEU) will execute the
23 review. Reporting of the findings will align with the PRISMA extension for Scoping Reviews
24 (PRISMA-ScR) tool (38).

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32 **Review question**

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34 The JBI's, Participant, Concept, and Concept (PCC) framework (37) was used to develop the
35 following review questions (See table 1): *What can be learned from a review of scientific*
36 *literature on ASD in all ethnic and religious groups in the UAE?*
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43 Table 1: The Participant, Concept, and Concept (PCC) framework

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Population (Important characteristics of participants)	Concept (Phenomenon of interest)	Context (Research setting)
All ethnic and religious groups	The scientific literature on alcohol and substance dependence	United Arab Emirates (UAE) (Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain,

		and Al Fujairah; and Ras Al Khaimah)
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Eligibility criteria

Following the development of the review question, the inclusion and exclusion criteria detailed in table 2, were formulated to guide the identification of eligible studies for inclusion in the review.

Table 2: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
<ol style="list-style-type: none"> 1. All humans (no restrictions): 2. All ethnic and religious groups, genders or age groups, with alcohol and substance dependence as the sample or an outcome. 3. Empirical studies, including qualitative, quantitative, and experimental designs in UAE (Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, and Al Fujairah; and Ras Al Khaimah) 4. Scientific literature on ASD, including studies reporting the prevalence, risk factors, relapse, treatment, aftercare and overdose. 5. English and Arabic languages 	<ol style="list-style-type: none"> 1. Opinion and narrative literature reviews 2. Retrospective correlation studies between alcohol and drug consumption and medical conditions. 3. Studies covering the treatment of medical conditions. 4. Stimulants such as nicotine and caffeine 5. Herbal medicine/products 6. Studies where reporting on findings of UAE sample is not clear.

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Inclusion criteria	Exclusion criteria
6. Online and hard-copy sources	
7. Grey literature, such as postgraduate dissertations and conference proceedings.	

Types of literature sources

This scoping review will consider scientific literature such as quantitative, qualitative and experimental study designs, including randomised controlled trials, non-randomised controlled trials, before and after studies and interrupted time-series studies. In addition, analytical observational studies, including prospective and retrospective cohort studies, case-control studies and analytical cross-sectional studies, will be considered for inclusion. This review will also consider descriptive observational study designs, including case series, individual case reports and descriptive cross-sectional studies for inclusion. Qualitative studies focusing on qualitative data will also include, but are not limited to, designs such as phenomenology, grounded theory, ethnography, qualitative description, action research and feminist research. Grey literature, such as conference proceedings and postgraduate dissertations, will also be included. Older literature sources, such as dissertations and theses from the 1970s and 1980s, may be difficult to find online. As a result, on request, a librarian will identify and retrieve hard-copy scientific sources from the UAE University library or other libraries

Search strategy and terms

The search strategy will locate published and unpublished studies/grey literature in English and Arabic. An initial limited search of Pubmed, Scopus, Embase and EBSCOhost was undertaken to identify the relevance of search terms. Following a consultation with a librarian

at the UAE University and studying text words contained in the titles and abstracts of search results, the search terms were amended. For example, the search term "use" and "Gulf" were omitted as they elicited irrelevant articles. In addition, search terms "narcotic", "psychotropic", and "psychoactive" was added as the preliminary results identified studies using these terms. See table 3 for the database search script and preliminary results for Pubmed, Scopus, Embase and EBSCOhost databases. The other databases that will also be included in this review are Cochrane Library, PsycINFO, Science Direct, and Web of Science. Arabic databases include Arab Info and AL Manhal. These ten databases will be divided among the team members and searched between March 2023 and May 2023 using the search script that will be adapted for each database. Studies published in English or Arabic between 1971 and January 2023 will be included due to the limitations of the previous systematic review. However, the studies included in the systematic review will be used to identify eligible studies that may not have been identified through the searches.

For each included database and information source, the following keywords, in both English and Arabic, as well as a combination of the search fields' title, abstract, keywords, and MeSH terms, will be applied and adapted:

("Substance" OR "drug" OR "narcotic" OR "psychoactive" OR "psychotropic" OR "alcohol" AND "abuse" OR "addiction" OR "dependence" OR "disorder" AND "United Arab Emirates" OR "UAE" OR "Middle East" OR "GCC").

The Arabic search terms are:

أو "الاعتمادية" أو "الإدمان" أو "الإساءة" و "الكحول" أو "العقلية المؤثرات" أو "المخدرات" أو "المادة"
"الأوسط الشرق" أو "المتحدة العربية الإمارات دولة" و "اضطراب"

Hand searches of the reference list of all included full-length articles will be screened for additional studies. We will also search Research Gate and Artificial Intelligence platforms such as Research Rabbit and Elicit to screen for eligible studies. Furthermore, contact will be made with study authors to explore if they know of any other unpublished studies. Following Arksey and O'Malley (39), experts in the field, such as the National Rehabilitation Centre, will be contacted to ascertain the existence of any unpublished reports.

The research team members will upload the search results in RIS format to a OneDrive folder. Next, AF will export research results from the OneDrive folder to an EndNote library, where duplicates will be removed within and across databases (40). Next, the endnote library will be prepared by AF in an XML file and imported to the systematic review software Covidence²¹(41), which will be used for further deduplication of records and blinded screening, conflict resolution and selection.

The search results and the study inclusion process will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) flow diagram (38).

Table 3: Example of the preliminary database search script and results

Search dates: 30 January 2023

Filters: Language English; 1971 – January 2023

Database	Search Script	Items found
PubMed	((("Substance" OR "drug" OR "narcotic" OR [Mesh] OR "alcohol" [Mesh] AND "abuse" OR "addiction" OR "dependence" OR "misuse" OR "disorder" [Mesh] AND "United Arab Emirates" OR "UAE" OR "Middle East" OR "Gulf" OR "GCC")) AND PUBYEAR AFT 1971	256
Embase	TITLE-ABS-KEY ("Substance OR drug*" OR "narcotic" OR "alcohol." AND "abuse" OR "addiction" OR "dependence" OR "disorder."	309

Database	Search Script	Items found
	AND "United Arab Emirates" OR "UAE" OR "Middle East" OR "Gulf" OR "GCC")) AND PUBYEAR AFT 1971	
Scopus	TITLE-ABS-KEY (("Substance" OR drug" OR "narcotic" OR "alcohol." AND "abuse", "addiction", "dependence", "misuse", OR "disorder." AND "United Arab Emirates" OR "UAE" OR "Middle East" OR "Gulf" OR "GCC")) AND PUBYEAR AFT 1971	640
Ebsco	TITLE-ABS-KEY (("Substance OR drug*" OR "alcohol" AND "abuse", "addiction", "dependence", "misuse", OR "disorder." AND "United Arab Emirates" OR "UAE" OR "Middle East" OR "Gulf" OR "GCC")) AND PUBYEAR AFT 1971	148

Screening process

The team settings in Covidence will allow importing citations, managing screening by multiple reviewers, data extraction and file export. The screening of titles and abstracts will be done over two stages. During each stage, four team members (Two English-speaking and two Arabic-speaking) with a good knowledge of the topic will independently screen titles and abstracts according to the review's eligibility criteria. In preparation for the first stage, screening titles and abstracts and the inclusion and exclusion criteria will be pilot tested by screening at least ten titles and abstracts during a team meeting. Next, the team will adjust eligibility criteria (see table 2) and formulate a potential justification for exclusion. Finally, four members will independently screen all the English and other Arabic titles and abstracts against the inclusion and exclusion criteria to remove irrelevant material. Justification for exclusions will be documented in Covidence. The screening phase will take place between June 2023 and August 2023. A third independent reviewer will handle conflicts between reviewers (AF for English and AA for Arabic studies). Using Covidence, the Inter-rater reliability data

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from the title and abstract screening stage will be exported, and Cohen's Kappa coefficient will be calculated.

Only full-length articles from studies that reached a consensus on inclusion will be downloaded during the second screening phase. Hereafter, potentially relevant full-length articles will be uploaded on Covidence by AF (English studies) and AA (Arabic studies). Two team members will independently review the English full-text articles, and two Arabic-speaking team members will assess the Arabic articles against the eligibility criteria. Reasons for excluding sources of evidence in full text that do not meet the inclusion criteria will be recorded. Any disagreements between the two reviewer's teams will be resolved at a team meeting where all authors are present.

After a decision was made on the full-text included studies, the reference lists of the included studies will be screened to identify further eligible studies by KC and KA. These articles will be imported to Covidence, and AF, VA, AA, and MA will screen the titles and abstracts, followed by downloading and screening for eligible full-length articles. Next, two team members, PT and KA, will contact experts in the field to obtain unpublished studies, reports and conference presentations. These sources will be screened for eligibility by these two team members.

Charting the data

Next, data extraction will take place. The aim is to create a descriptive summary of the results which addresses the scoping review's objectives and ideally answers the questions of the review. First, data extraction 2.0 will be created in Covidence (41) using the following items: Author(s); Year of publication; Origin/country of origin (where the study was published or conducted); Aims/purpose; Study population and sample size (if applicable); Methodology/methods; key findings that relate to nature and extent of ASD; contextual factors;

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3 risk and protective factors (42) The draft data extraction tool will be modified and revised as
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5 necessary while extracting data from each included evidence source. The draft extraction form
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7 will first be pilot tested by the two reviewers on at least five studies. Next, the research team
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9 will meet to discuss the finalisation of the data extraction during a team meeting. Two reviewers
10
11 will independently extract data and send it for consensus to a third reviewer on Covidence. Any
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13 reviewer disagreements will be resolved through discussion or with an additional reviewer/s.
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15 If appropriate, authors of papers will be contacted to request missing or additional data, where
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17 required. The extracted data will be circulated hereafter on Google drive for other team
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19 members to review. Any amendments to the data extraction tool will be documented in the
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21 Scoping review. Data charting will take place between September 2023 and November 2023
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27 **Data analysis and presentation**

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29 After the data extraction, the export function in Covidence will be used to export the data in an
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31 excel.csv format. Finally, the data sheet will be prepared for data analysis and synthesis. This
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33 study will draw on JBI's recent publication on qualitative content analysis in scoping reviews
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35 (42) and the constant comparison of qualitative data analysis to inform the analysis of extracted
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37 data. Following data analysis and an iterative process between the data set and ASD literature,
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39 categories will be developed to respond directly to the review question(s). The findings will be
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41 presented graphically or in diagrammatic or tabular form. A narrative summary will accompany
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43 the tabulated and charted results and describe how the results relate to the review's question.
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45 Data analysis and writing up the scoping review findings will occur between December 2023
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47 and February 2024.
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53 **Patient and public involvement**

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There is no patient involved in the study. However, a summary of the findings will be sent to key stakeholders in the UAE working in the field of ASD in February 2024 to comment on and provide feedback before submission for publication (43).

Ethics and dissemination

Ethical approval is not required for this study because this is a scoping review of published studies and grey literature. This scoping review's findings will be disseminated via peer-reviewed journal publications, scientific conference presentations, and a policy brief.

For peer review only

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Footnotes

- **Contributors:** AF conceived of the idea, developed the research questions and study methods and contributed meaningfully to the drafting and editing; she has also approved the final manuscript. AA, MA, KA, VA, KC, RM, and PT aided in developing the research question and study methods, translation and back-translation of searching terms, contributed meaningfully to the drafting and editing and approved the final manuscript.
- **Funding:** This research received no specific grant from any public, commercial or non-profit funding agency.
- **Competing interests** None declared.
- **Provenance and peer review** Not commissioned; externally peer-reviewed.
- **Data sharing statement** No additional data are available.

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	
Limitations	20	Discuss the limitations of the scoping review process.	
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	

JB I = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med*. 2018;169:467–473. doi: 10.7326/M18-0850.